THERMAL POLLUTION

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Thermal pollution mainly refers to the undesirable effects arising due to addition of heat to bodies of water (e.g., rivers, lakes, etc.)

Effects Aquatic organisms adversly.

ORIGIN

- Thermal pollution in a water body occurs through the discharge of warm water to it from an industrial source.
- Main use for cooling purpose

Steam used in turbines condensed again returned to boiler. For condensation water from water bodies used and returned. Temp. will b 15 C higher than normal.

Undesirable effects (or consequences) of thermal pollution

1. Aquatic organisms can withstand only a temperature increase of even 2-3°C. Some river have temperature above 40 C because of thermal pollution. Hence some species will be destructed.
2. Depletion of dissolved oxygen.
3. Diversity of fauna in a particular region gets significantly changed. The species which can survive this temperature will flourish excessively.

Undesirable effects (or consequences) of thermal pollution …….

4) Power plant shutdowns lead to the death of those survived species live in warmer waters because they cant adopt with sudden changes in temperature.

5) Thermal pollution may lead to global warming and other climatic changes.

Control of thermal pollution

Warm water from coolers should be cooled can then be discharged into the water body or recycled back to the plant to be reused for cooling purposes.

Methods to

cool Warm water from industries

- (1) Cooling pond method: The warm water from the plant is allowed to flow into a large artificial pond. Evaporation takes the heat to the atmosphere, leaving behind cooler water. Cooler water can be taken from the pond and used for cooling condenser.
- (ii) Cooling tower method: The warm water from the plant is sprayed downwards over vertical sheets kept in a cooling tower and cool air is passed upwards. Heat exchange occurs between the water and air. The cooled water collected at the base of the tower is recycled back to the power plant condensers for cooling purposes.